Holland+Knight

Tel 202 955 3000
Fax 202 955 5564

Holland & Knight LLP
2099 Pennsylvania Avenue, N.W.
Suite 100
Washington, D.C. 20006-6801
www.hklaw.com

George Y. Wheeler
202 457 7073
george.wheeler@hklaw.com

March 7, 2006

Ms. Marlene H. Dortch
Federal Communications Commission
445-12th Street, S.W.
Washington, DC 20554

Re: AU Docket No. 06-30

Dear Ms. Dortch:

Transmitted herewith on behalf of United States Cellular Corporation is a statement dated March 7, 2006 prepared by Professor Robert J. Weber entitled "Strategic Demand Reduction, and the Disclosure of Bidder Identities in the AWS Auction." Professor Weber's statement comments upon the paper, "Self-enforcing strategic demand reduction," by Paul S.A. Reitsma, Peter Stone, J'anos A. Csirik and Michael L. Littman, referenced in the Comments filed by Center for Study of Auctions, Procurements and Competitive Policy dated February 14, 2006. Professor Weber concludes:

> " In consequence, concealing bidder identities will decrease the level of competition from precisely the types of bidders (those with limited aspirations) whose presence in an auction most strongly interferes with potentially-collusive behavior. As well, that decreased level of competition will negatively impact both auction efficiency and auction revenues, and will decrease the diversity of ultimate market participants."

Pursuant to Sec. 1.1206(b) of the Commission's rules, an electronic copy of this letter is being filed.

In the event there are questions or comments please communicate with the undersigned.

Very truly yours,

George Y. Wheeler

Cc: Leslie Marx
Walter Strack
Evan Kwerel
Martha Stancill
Margie Wiener

Statement by Professor Robert J. Weber[1] filed in FCC Docket AU 06-03

Strategic Demand Reduction, and the Disclosure of Bidder Identities in the AWS Auction

1. Introduction

As the FCC prepares to make its final decision with regard to the disclosure of bidder identities in the upcoming AWS auction, it seems important to comment directly upon a potentially-relevant paper, "Self-enforcing strategic demand reduction," by Paul S. A. Reitsma, Peter Stone, J´anos A. Csirik, and Michael L. Littman (subsequently, RSCL).

This paper reports the results of a series of computer simulations which show that a particular bidding strategy, "punishing randomized strategic demand reduction" (subsequently, PRSDR), could assist a group of bidders in lowering the prices they pay for the licenses they obtain in a simultaneous multi-round ascending-bid (SMR) auction of the type conducted on a regular basis by the FCC. ***Since bidders can only implement PRSDR if bidder identities are revealed, one might be tempted to conclude that the concealment of bidder identities is crucial if such strategic cooperation amongst bidders is to be averted.***

To draw such a conclusion from the RSCL paper would be inappropriate with regard to the AWS auction.

2. Strategic Demand Reduction

Over the past decade, numerous authors have discussed this very simple idea: Several bidders in a multi-item auction, wanting in aggregate more items than are

---

[1] Robert J. Weber is the Frederic E. Nemmers Distinguished Professor of Decision Sciences at the Kellogg School of Management, Northwestern University. Educated at Princeton and Cornell, he was a faculty member of the Cowles Foundation for Research in Economics at Yale, and taught in the Yale School of Organization and Management, prior to joining the Kellogg faculty in 1979.

His general area of research is game theory, with a primary focus on the effects of private information in competitive settings. Much of his research has been centered on the theory and practice of competitive bidding and auction design. His 1982 paper, "A Theory of Auctions and Competitive Bidding" (*Econometrica* 50, co-authored with P.R. Milgrom), is considered a seminal work in the field. He served as an external consultant on a 1985 project leading to revisions in the procedures used to auction petroleum extraction leases on the U.S. outer continental shelf, and he co-organized (with representatives of the Federal Reserve Board and the U.S. Treasury) the 1992 public forum which led to changes in the way the Treasury auctions its debt issues. He has represented private clients during both the rule-making and bidding phases of the FCC's sale of licenses of spectrum for the provision of personal communications services.

being sold, can jointly reduce their aspirations early in the auction (fully expecting that, otherwise, those aspirations will still have to be reduced before the auction's conclusion) in order to hold down the prices they pay for the items they obtain. This joint early reduction in expressed demand can lead to greater profits for all than had they bid more aggressively against one another through the early stages of the auction.

For example, Weber ["Making more from less: Strategic demand reduction in the FCC spectrum auctions," *Journal of Economics and Management Strategy* 6(3)] provides a two-bidder illustration that – with an appropriate "punishing" response incorporated in the bidders' strategies – strategic demand reduction can occur at equilibrium (i.e., purely as a consequence of rational bidder behavior), with no need for prior communication between the "cooperating" bidders.

Is strategic demand reduction, in and of itself, a bad thing? It's a matter of perspective. Certainly, the bidders in an SMR auction must, at *some* point, reduce their combined expressed demand to the number of items offered for sale. The reduction itself in no way affects seller revenues. It is the *timing* of the reduction that has an effect. The earlier, the better for the bidders; the later, the better for a seller concerned purely with auction revenue. Does the timing of the reduction affect auction efficiency (i.e., the ultimate assignment of items to bidders who value the items most highly, presumably because they expect to ultimately offer the most highly-valued services to consumers)? There seems to be no evidence indicating such an effect … and therefore, no reason for a seller to be concerned about strategic demand reduction from an efficiency perspective.

3. Impeding Strategic Demand Reduction

A seller with a primary focus on auction revenues might wish to make early strategic demand reduction (as a result of equilibrium behavior) difficult for the bidders. Can this be done?

If the bidders are allowed to engage in pre-auction communication: No. If all of the bidders meet (i.e., form a bidding "ring"), agree to a sensible final allocation of the items being sold, and further agree to punish deviations from the agreement by continuing to drive up the prices of any items which draw multiple bids, then they can expect to obtain all of the items (per agreement) at low cost – even if bidder identities are not revealed as the auction progresses.

Of course, such pre-auction communication is forbidden in the FCC spectrum auctions. In this case, can bidders still somehow establish mutually-beneficial early strategic demand reduction?

The accomplishment of the RSCL paper is to show that, ***under certain circumstances***, they can. However, the PRSDR strategies which they show can (under these circumstances) accomplish relatively-early strategic demand reduction depend critically on the bidders knowing the identities of the bidders on each item, in each round of the auction. ***This might lead one to conclude that it is in the seller's (revenue-generation) interest to conceal the identities of***

the submitters of bids in each round, purely for the purpose of making PRSDR-type strategies impossible to implement. Such a conclusion is not valid for the upcoming AWS auction.

4. It's All in the Details

The RSCL analysis is based on a series of simulations, all conducted in the same environment: There are some "serious" bidders, who value licenses substantially more highly than the remaining bidders. These serious bidders all know precisely which other bidders are also serious, and – critically – have relatively accurate information concerning the budgets, priorities, and valuations of the other serious bidders for all of the licenses. Valuation-interdependencies such as geographic issues (e.g., adjacency) – closely related to efficiency in actual practice – are absent in the simulations.

The notion of a "fair" allocation of licenses to the serious bidders is absolutely central to PRSDR strategies: Serious bidders ultimately (after some early-round random tie-breaking by the seller) compete only for their "fair" share of licenses, established (by random bidder within-auction choice) in the early rounds to be non-overlapping sets of licenses. "Bad luck" in the early randomizations is covered by a "fairing" process, where the "luckier" serious bidders allow unlucky ones to take a few licenses from them – using their common assessments of the others' objectives and valuations to evaluate relative "luck." "Cheaters" are identified (and ultimately punished) by comparing their actions to their "luck" level. [RSCL introduce the notion of "satisfaction" level, which is equivalent to the use of the word "luck" here: High "satisfaction" is the result of early "luck."]

In the AWS auction, several issues impede the implementation of PRSDR-type strategies. First of all, there is no natural set of "serious" bidders. Indeed, the FCC's band plan is specifically structured as to make national, regional, and local competitors all "serious." Not only will the auction permit current wireless operators to augment their existing assets and expand their services: It presents as well an opportunity for new entrants seeking spectrum to deliver new and emerging wireless technology offerings.

In addition, the aspirations (based on budgets, priorities, and valuations) of the bidders are not all easily estimated. Indeed, the pre-auction "game" PRSDR-bidders must play is one in which every bidder tries to convince the other bidders that its aspirations are "high," so its "fair" share of licenses is also high. Many bidders have aspirations based on geography, an issue not even considered in the RSCL treatment.

Most importantly, as previously-filed (Proceeding 06-30) comments indicate, many of the regional and smaller competitors' aspirations – valuations – will not be known, even to the competitors themselves, until the likely allocations of licenses amongst some of the larger competitors becomes apparent.

For all of these reasons, the FCC should not feel compelled to conceal bidder identities in the AWS auction on the basis of the RSCL paper.

PRSDR-type strategies cannot – in this auction – be implemented in any practical manner.

5. What is the Cost of Concealing Bidder Identities?

Still, the FCC might be tempted to experiment with bidder-identity concealment. After all, even if not necessitated, one might speculate that it might not do any damage.

Ahh. But damage it *will* do! To the extent that bidder-identity concealment makes valuations more difficult for smaller competitors to estimate, they will find themselves subject to a combination of increased risk and, potentially, the well-known "Winner's Curse." Bidders facing greater valuation uncertainty must – rationally – scale back their willingness-to-bid. ***This will have a predictable direct impact on auction revenues, reducing them both on licenses those bidders might have won, and on licenses where those bidders would have otherwise pushed the eventual winner to a higher price.***

Indeed, Section 6.3 of the RSCL paper illustrates that, when the "smaller" bidders bid more aggressively, strategic demand reduction yields less gain to the "serious" bidders (and therefore less lost revenue – if any – to the seller).

Greater valuation uncertainty for a class of bidders, in turn, also reduces the likely efficiency of the auction outcome, which of course is directly related to ultimate consumer benefit.

It's not surprising that Verizon stands as the sole industry proponent of bidder-identity concealment in the AWS auction. Facing less of a valuation problem than small bidders, they would benefit (through reduced competition in the auction) from such concealment. ***To tilt the playing field in the direction of one (or a few) large competitors would violate the FCC's long-standing goal of using diversity to promote technological innovation in the types of services delivered and the mechanisms of delivery, to foster competition in the market for wireless services, to support development of service to rural and underserved markets, and to provide opportunities for small business participation.***

A number of agencies and individuals have argued that bidder-identity concealment will either do no harm, or will actually help smaller auction participants. For example, the Department of Justice ex parte filing claims, "to the extent that firms will commit to specific technologies, they will likely do so only after this auction concludes, and the prevailing technology will likely reflect preferences of bidders with large stakes at that point. ... information available from bidder identities during the auction will likely be of little relevance to the bidding decisions and business plans of firms participating in the auction." This argument flies in the face of the standard justification for use of the SMR auction procedure: that it allows bidders to unwind positions and restructure plans as the auction unfolds and likely outcomes begin to crystallize. The same filing goes on to conclude that "knowledge of bidder identities associated with particular bids still can facilitate coordinated behavior by sophisticated and better financed

auction participants and potentially result in less opportunity for smaller bidders to compete for certain licenses." If this "potential" issue were a serious concern, then it is striking that not a single "small" industry commenter has raised such a concern on its own, or expressed any opinion other than opposition to the concealment of bidder identities.

6. Conclusion

Much of the benefit provided by the FCC's use of the SMR auction procedure is that SMR auctions effectively facilitate the process by which bidders jointly determine an efficient allocation of licenses. This, in turn, provides direct benefit to consumers.

At the same time, of course, the sale of licenses at auction generates revenues.

Over time, the FCC has revised the detailed implementation of SMR auctions, successfully limiting opportunities for bidder abuse while preserving the efficiency- and revenue-enhancing features of its auctions.

For the AWS auction, the FCC has provided a band plan that offers substantial flexibility for market development. The auction should draw significant interest from both existing wireless providers and serious new entrants (media companies, cable operators, data services providers, and others).

Concealing bidder identities as the auction progresses would constitute a major change from past auctions. This change is certainly not required in order to eliminate the possible use of PRSDR-type strategies, since the size of the prospective field of bidders, and the difficulty of bidders reaching common assessments of bidder aspirations across the field, make the use of such strategies impossible in the AWS context.

Concealing bidder identities, on the other hand, will predictably increase valuation uncertainty for regional and smaller bidders.

In consequence, concealing bidder identities will decrease the level of competition from precisely the types of bidders (those with limited aspirations) whose presence in an auction most strongly interferes with potentially-collusive behavior. As well, that decreased level of competition will negatively impact both auction efficiency and auction revenues, and will decrease the diversity of ultimate market participants.

With little (if anything) to be gained, and much to potentially (and likely) be lost, from experimenting with a major change in auction rules in this important upcoming auction, the FCC is well-advised to maintain its prior policy of full revelation of bidder identities in the AWS auction.